

WHAT IS CLAIMED IS

1. A dry solid composition for generating chlorine dioxide gas consisting essentially of a combination of at least one dry metal chlorite and at least one dry solid
5 hydrophilic material selected from the group consisting of zeolites, hydrous clays, calcined clays, acidified zeolites, acidified clays, acidified calcined clays, salts, solid acids and mixtures thereof, wherein said combination is one which passes both the Dry Air and Humid Air tests.
2. The composition of claim 1 wherein the dry metal chlorite is selected from the group consisting of alkali metal chlorites, alkaline earth metal chlorites and mixtures thereof.
3. The composition of claim 2 wherein the alkali metal chlorite comprises sodium chlorite or potassium chlorite.
4. The composition of claim 3 wherein the alkali metal chlorite comprises sodium chlorite.
5. The composition of claim 2 wherein the alkaline earth metal chlorite is selected from the group consisting of barium chlorite, calcium chlorite and magnesium chlorite.
6. The composition of claim 1 wherein a 30 weight percent mixture of the hydrophilic material in deionized water has a pH of no more than about 10.5.
7. The composition of claim 6 wherein the mixture has a pH of less than 9.

8. The composition of claim 1 wherein the dry solid hydrophilic material comprises at least one inorganic material.

9. The composition of claim 1 wherein the inorganic material is selected from the group consisting of zeolites, hydrous clays, calcined clays, acidified zeolites, acidified clays and acidified calcined clays.

10. The composition of claim 9 wherein the inorganic material is selected from the group consisting of zeolites and acidified zeolites.

11. The composition of claim 9 wherein the hydrous clay is selected from the group consisting of bentonite, kaolin, attapulgite and halloysite.

12. The composition of claim 9 wherein the calcined clay is selected from the group consisting of metakaolin, spinel phase kaolin, calcined bentonite, calcined halloysite and calcined attapulgite.

13. The composition of claim 9 wherein the acidified clay is selected from the group consisting of bentonite, kaolin, attapulgite and halloysite that have been contacted with one or more acidic solutions containing sulfuric acid, hydrochloric acid, nitric acid or other acidic compounds so that the pH of the aqueous phase of the mixture is below 10.5.

14. The composition of claim 9 wherein the acidified calcined clay is selected from the group consisting of metakaolin, spinel phase kaolin, calcined bentonite, calcined halloysite and calcined attapulgite that have been contacted with one or more acidic solutions containing sulfuric acid, hydrochloric acid, nitric acid or other acidic compounds
5 so that the pH of the aqueous phase of the mixture is below 10.5.

15. The composition of claim 1 wherein the salts are deliquescent salts.
16. The composition of claim 1 wherein the salt comprises calcium chloride.
17. The composition of claim 1 further comprising an effective amount of at least one desiccant.
18. The composition of claim 17 wherein the desiccant is present in an amount of about 0.1 to 25 weight %, based on the total weight of the composition.
19. The composition of claim 18 wherein the desiccant is selected from the group consisting of activated calcium chloride, activated calcium sulfate, activated zeolite X, activated zeolite A, activated bentonite clay, activated silica gel, activated attapulgite and mixtures thereof.
20. The composition of claim 1 wherein the weight ratio of the metal chlorite to said dry solid hydrophilic material is in the range of about 0.001 to 0.25:1.0.